

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife
Honolulu, Hawaii 96813

April 28, 2006

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: MO'OMOMI PRESERVE CONTINUED ENROLLMENT IN THE
NATURAL AREA PARTNERSHIP PROGRAM AND AUTHORIZATION
OF FUNDING FOR FY07-12

SUMMARY:

This submittal requests the Board to authorize matching funding for the management of Mo'omomi Preserve as part of the Natural Area Partnership Program (NAPP). Although the Natural Area Partnership agreements are made in perpetuity, funding is authorized on a six-year basis to allow for regular periodic State and public review. The current contract is scheduled to terminate at the end of this Fiscal Year, and The Nature Conservancy has prepared a new six-year management plan for Fiscal Years 2007-2012. The Division of Forestry and Wildlife recommends the authorization of matching funding, in the amount of \$314,097, to continue conservation management at Mo'omomi Preserve for Fiscal Years 2007-2012.

BACKGROUND:

The State's NAPP program was established in 1991, and provides matching funds (\$2 State to \$1 private) for the management of qualified private lands that have been permanently dedicated to conservation (Hawai'i Revised Statutes (HRS) § 195-6.5). Statewide, there are seven preserves enrolled in the program, with three on Moloka'i: Pelekunu Preserve, Mo'omomi Preserve, and Kamakou Preserve.

Mo'omomi Preserve, located on the island of Moloka'i, was purchased by The Nature Conservancy in 1988 from Moloka'i Ranch, Limited, to protect one of the most intact coastal sand dune ecosystems in the Hawaiian Islands. The Nature Conservancy currently manages the property pursuant to previously approved long-range management plans.

ITEM C-1

Mo‘omomi Preserve (TMK: 5-1-002-037) includes 921 acre, and is located partially in the State Agricultural District and partially in the State Conservation District, Protective subzone. The Long-Range Management Plan for Fiscal Years 2007-2012 (“FY07-12 LRMP,” attached as Exhibit 1) provides a more detailed description of the natural resources protected in Mo‘omomi Preserve, and the management activities planned over the next six years. In brief, the Preserve protects a native-dominated coastal ecosystem, including several rare plant taxa and protected nesting sites for the threatened green sea turtle and seabirds such as the wedge-tailed shearwater. In addition, the Mo‘omomi contains numerous archaeological sites and paleontological resources, and the coastal area is used by the Moloka‘i Native Hawaiian community for fishing and gathering of marine and coastal resources such as sea salt, limu, shellfish, and certain native plants. Planned management over the next six years will focus on protecting the Preserve’s natural resources. The management emphasis will be on removing priority weeds (especially kiawe), controlling small mammals (especially during seabird nesting season), and building community support concerning the conservation of native natural resources.

All actions being proposed for reauthorization in the FY07-12 LRMP are substantively similar to, and relevant to, actions previously considered in the Final Environmental Assessment for Mo‘omomi Preserve for which The Nature Conservancy received a “Finding of No Significant Impact” in 2000. Pursuant to Hawai‘i Administrative Rule (HAR) § 11-200-13 (Consideration of previously determined and accepted statements), all environmental review obligations under HRS Chapter 343 have been fulfilled and are in keeping with the letter and intent of the Administrative Rules regarding the NAPP program.

The total budget for Fiscal Years 2007-2012 is \$471,145. Continuing as a Preserve under the NAPP, the State would provide 2:1 matching funding for the natural area protection efforts outlined in the FY07-12 LRMP. Total State funding requested for Fiscal Years 2007-2012 is \$314,097; The Nature Conservancy will provide the match of \$157,048. The total budget is an increase of approximately \$167,684, with an increase of \$111,790 in the amount requested, over the six-year period and reflects increased effort for weed control, predator control, and community outreach activities.

The FY07-12 LRMP was reviewed by Division of Forestry and Wildlife staff and presented to the Natural Area Reserves Commission on April 3, 2006. The Commission unanimously voted to approve the FY07-12 LRMP and forward it to the Board for its review and approval.

DISCUSSION:

The NAPP Program seeks to protect, restore, or enhance significant native resources of the State by providing funding for private landowners to conduct long-term conservation management

over private lands of natural area reserve quality. Mo‘omomi Preserve is an excellent example of a partnership involving the private and public sectors to protect one of the State’s best examples of coastal ecosystems.

In 1993, the State Legislature established a dedicated funding source for the program through the dedication of a portion of the conveyance tax. Although the Natural Area Partnership agreements are made in perpetuity, funding is authorized in six-year increments, for the entire term of its approved management plan. Approval of funding to implement the conservation actions proposed in the FY07-12 LRMP would demonstrate the State’s continued strong support and recognition of the importance of long-term natural resources management, demonstrate the program’s potential, and potentially attract additional private partners.

The objective of the Protective subzone of the Conservation District is to protect resources in such designated areas as natural area reserves, important watersheds, or plant and wildlife sanctuaries. The proposed use of conservation management as described within the Mo‘omomi Preserve FY07-12 LRMP continues previously approved activities and is a permitted use within the Protective subzone of the Conservation District according to HAR § 13-5-22 (P-7 Sanctuaries).

Based on the quality of the natural resources protected in Mo‘omomi Preserve, the effectiveness of past management efforts at Mo‘omomi Preserve in preserving and restoring this area as an intact native ecosystem, and the leadership The Nature Conservancy’s managing staff have demonstrated through community initiatives on Moloka‘i, staff recommends approval of the FY07-12 LRMP and the authorization of funding in the amounts requested.

RECOMMENDATION:

That the Board of Land and Natural Resources:

1. continue approval of the activities identified in the Mo‘omomi Preserve FY07-12 LRMP as a permitted use within the Conservation District;
2. authorize the continued funding for the Mo‘omomi Preserve as part of the Natural Area Partnership Program for Fiscal Years 2007-2012 in the amount requested (\$314,097); and
3. authorize the Chairperson to enter into a contract encumbering funds for the Mo‘omomi Preserve Natural Area Partnership Agreement with The Nature Conservancy for Fiscal Years 2007-2012 with the following conditions:

- a. the Long-Range Management Plan is accepted for a six-year period; and
- b. funding is authorized for the full six-year period as described in the Long-Range Management Plan.

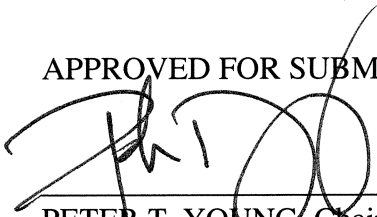
Respectfully submitted,

Randall W. Kennedy

for

PAUL J. CONRY, Administrator
Division of Forestry and Wildlife

APPROVED FOR SUBMITTAL:



PETER T. YOUNG, Chairperson
Board of Land & Natural Resources

Exhibit 1: Mo'omomi Preserve Long-Range Management Plan Fiscal Years 2007-2012

Mo‘omomi Preserve

Moloka‘i, Hawai‘i

Long-Range Management Plan

Fiscal Years 2007-2012

Submitted to the
Department of Land & Natural Resources
Natural Area Partnership Program

Submitted by
The Nature Conservancy of Hawai‘i

March 2006

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EXECUTIVE SUMMARY

The Nature Conservancy of Hawai‘i is an affiliate of The Nature Conservancy, an international private, non-profit organization based in Arlington, Virginia. The Conservancy’s mission is to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. Since 1980, the Conservancy has directly helped protect 200,000 acres of Hawai‘i’s best natural lands and established a statewide system of 11 preserves totaling almost 32,000 acres. Today, we are taking conservation to a new level in Hawai‘i by protecting the larger landscapes and biological systems of which our preserves are a part. Together with other public and private landowners, we are protecting almost 1 million acres of ecologically important lands through voluntary, cooperative partnerships that allow landowners to share expertise and resources and work across ownership boundaries.

The State’s Natural Area Partnership Program (NAPP) is an innovative program that aids private landowners in the management of their native ecosystems. NAPP provides matching funds (\$2 state to \$1 private) for the management of qualified private lands that have been permanently dedicated to conservation. On Moloka‘i, the Conservancy manages three NAPP Preserves: Mo‘omomi, Kamakou, and Pelekunu, and is the main coordinator/manager of the East Moloka‘i Watershed Partnership (EMoWP) which is directly responsible for management programs in Kamalō, Kapualei, and Kawela. The three NAPP preserves total just less than 10,000 acres and the EMoWP encompasses over 8,000 acres. Mo‘omomi was approved for NAPP funding in 1995. This long-range management plan updates an earlier plan covering fiscal years (FY) 1991–2006 and was prepared in compliance with the Natural Area Partnership agreement between the State and The Nature Conservancy of Hawai‘i. This plan documents management programs to be undertaken in the next 6 years (FY2007 – FY2012) at Mo‘omomi Preserve.

The state Department of Land and Natural Resources (DLNR), which administers the NAP program, is kept apprised of our progress in the preserve through written reports and an annual inspection. Operational plans are submitted annually (the Conservancy has adopted a July 1 – June 30 fiscal year). In addition, a six-month update is sent to DLNR each January. These documents are available upon request to others who are interested.

The first section of this plan is a brief overview of the native natural resources that are protected at Mo‘omomi Preserve. In the second section are management considerations that have shaped our programs. Finally, each management program is discussed in turn. Program goals are followed by an explanation of the management method we have chosen. Annual objectives and costs for each program from FY2007–FY2012 are also listed.

RESOURCE SUMMARY

General Setting

Mo‘omomi Preserve (Figure 1) was established in June of 1988 to protect the most intact coastal sand dune ecosystem in the main Hawaiian Islands. Mo‘omomi also contains significant archaeological, paleontological, and cultural resources. The 921-acre preserve is located along the northwest shore of Moloka‘i. Elevation runs from sea level to about 690 feet with annual rainfall estimated at about 20 inches throughout the preserve. The westernmost coastline of the preserve is characterized by sea cliffs; the remainder of the 2 mile long coastline consists of windswept sand beaches, a prominent foredune (parallels the beach) and rows of unconsolidated upper sand dunes just inland of the beach. The upper dune area of the preserve is known as Keonelele, “the flying sands.” Portions of the preserve dunes are lithified (sand dunes that become solidified) and are distinct in geological appearance and native strand.

Flora and Fauna

Mo‘omomi’s rich coastal dune ecosystem contains six native-dominated natural communities (Figure 2, Appendix 1). The vegetation on the sea cliffs is primarily comprised of nehe (*Lipochaeta integrifolia*) and hinahina (*Heliotropium* spp.) Coastal Dry Shrublands. The area just inland of the beach contains communities dominated by the native grass ‘aki‘aki (*Sporobolus virginicus*), and the native shrubs, naupaka (*Scaevola sericea*) and nehe. Immediately behind the native vegetation band, non-native species, especially kiawe, become dominant, extending upslope. Some native communities persist inland, however, including the rare *Tetramolopium rockii* Coastal Dry Shrubland.

Eight of the 38 native plant taxa reported from the preserve are rare. Three of the eight rare plant taxa are endemic to western Moloka‘i (*Pseudognaphalium sandwicense* var. *Molokaiense*, *Tetramolopium rockii* var. *rockii* and *Tetramolopium rockii* var. *calcisabulorum*), five are federally listed as endangered (*Centaurium sebaeoides*, *Chamaesyce skottsbergii* var. *skottsbergii*, and *Marsilea villosa*, *Tetramolopium rockii* var. *calcisabulorum* and *Tetramolopium rockii* var. *rockii*) (Appendix 2). Although *Marsilea villosa* has not been reported from the preserve since the 1970s, populations of this fern have been rediscovered just west of the preserve. Populations of *Sesbania tomentosa* (federally listed as endangered) occur just east of the preserve, *Chamaesyce skottsbergii* var. *vaccinoides* was reported southeast of Mo‘omomi sand dunes in 1928. *Schiedea globosa* was reported near the preserve in 1915.

In September 1999, a native wedge-tailed shearwater nest was sighted in the sand dunes of the Naupaka Coastal Dry Shrubland. This was the first observation of these birds nesting in the preserve since the Conservancy began management in 1988. Since the first sighting in 1999, we have observed a steady increase in the amount of active ground nests in the preserve, indicating that the area provides suitable nesting grounds.

Green sea turtles (*Chelonia mydas*, honu), listed as threatened by the state and federal governments, frequent the coastline of Mo‘omomi Preserve (Appendix 3). Mo‘omomi provides some of the most significant nesting sites in the main Hawaiian Islands for the turtles. Laysan albatrosses (*Diomedea immutabilis*, mōlī) and monk seals (*Monachus schauinslandi*, ‘Īlio-holo-i-ka-uaua) also visit the area, and may someday become established at Mo‘omomi.

FIGURE 1. Mo'omomi Preserve

Figure 1
Mo'omomi Preserve

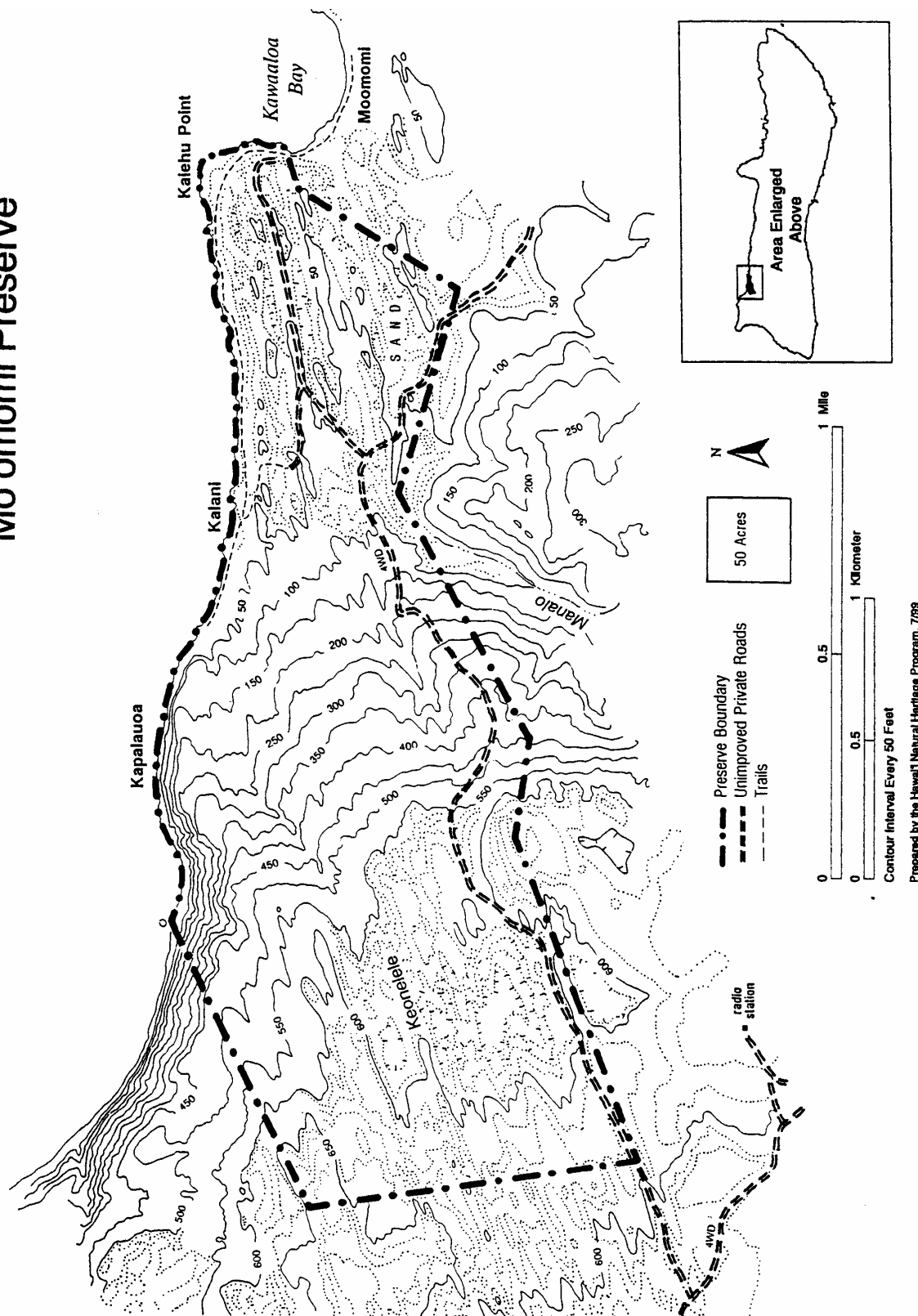
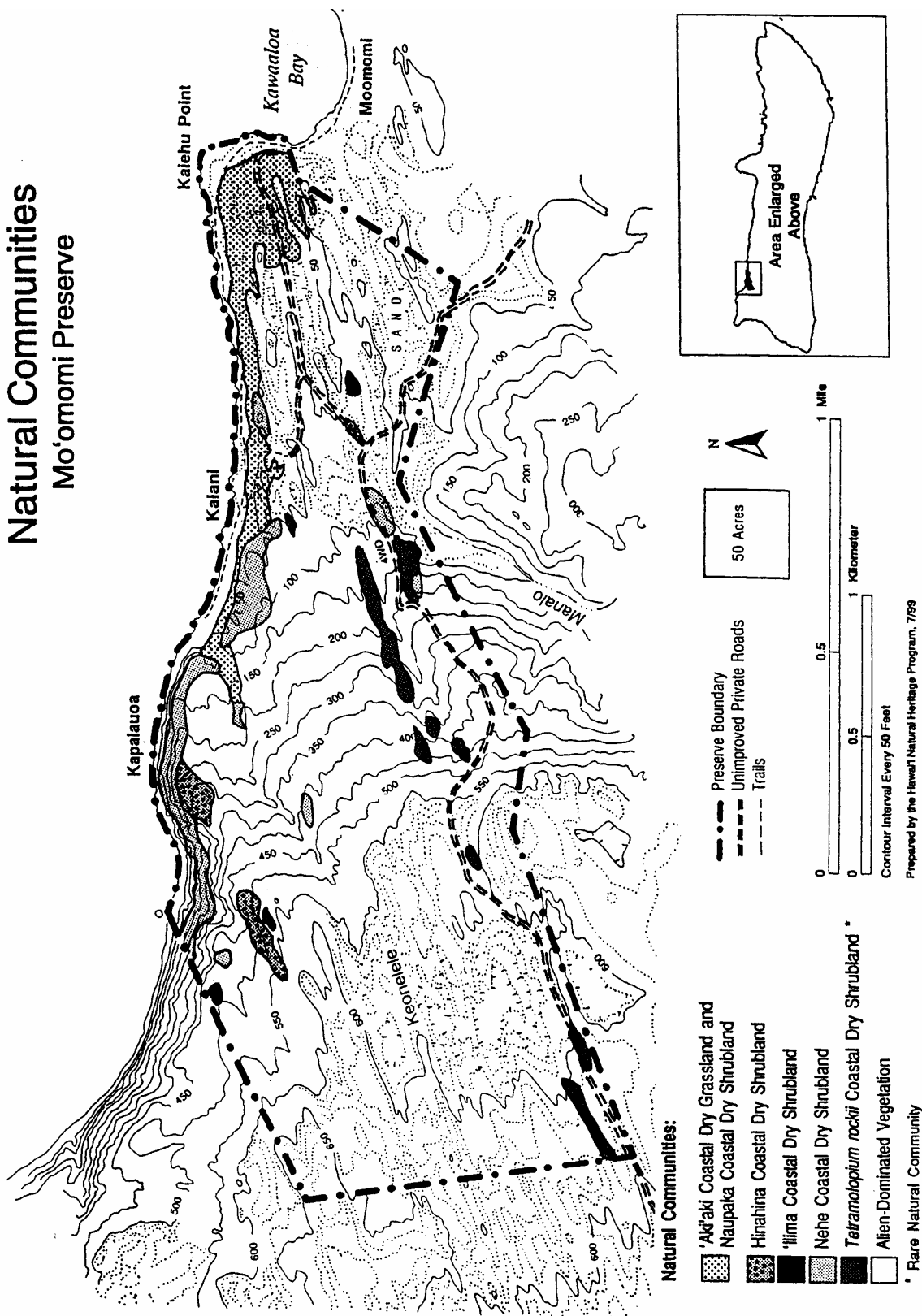


FIGURE 2. Mo‘omomi Preserve Natural Communities

Figure 2
Natural Communities
Mo‘omomi Preserve



MANAGEMENT

Management Considerations

1. In 1988 the Conservancy purchased 921 acres from Moloka'i Ranch, Ltd., now known as Moloka'i Properties, Ltd. (MPL) to establish Mo'omomi Preserve. The preserve lands are surrounded by MPL properties. An easement, which is part of the deed, allows the Conservancy access to the preserve on all existing roads. MPL and the Conservancy also have a Fencing Agreement that states that the MPL is responsible for repairing fence breaks and removing any livestock that escape from MPL lands into the preserve within 48 hours. (This agreement also recognizes that the fence is not the legal boundary between MPL and Conservancy lands.)
2. Our primary management activities for protecting the preserve's native plants, animals, and natural communities are to reduce feral and domestic ungulate damage, control predation on nesting sea birds, and limit the spread of non-native, habitat-modifying plants.
3. Wedge-tailed shearwater ground nesting activity on the preserve has increased the need for control of predators such as cats, dogs, and mongoose.
4. Humans pose a threat to Mo'omomi in several respects. The rich coastal resources of Mo'omomi (fish, limu, crab, salt, etc.) make it a popular site for residents and visitors. The Conservancy allows access for non-commercial use of these resources. Off-road vehicles venturing off the roads and campsites can destroy the dune system and sensitive native natural communities. In addition, the number of users largely determines how the coastal marine resources will be sustained. Therefore, one of our ongoing tasks is to work with the community, principally with Hui Mālama O Mo'omomi, to determine the access level suitable to maintain sustainable harvesting practices. Additionally, ocean currents continually deposit human-produced debris on to the beach, posing a hazard to endangered turtles, which nest in the area.
5. Our priority is to protect Mo'omomi's biological significance. However, Mo'omomi is known for its beauty, wild setting, and cultural significance. This management plan considers the need to protect all of these aspects of Mo'omomi. Staff will respond appropriately if degradation or vandalism is observed on cultural resources.
6. The main preserve road ends at the coast in the northeastern corner (Kaiehu Point) of the preserve. This road is used by visitors and for management. In addition, a traditional foot trail begins east of the preserve and parallels much of the preserve coastline. A four-wheel drive road that extends along the southern length of the preserve is used for management.
7. Rich paleontological resources and archaeological sites are scattered throughout the preserve. Staff and hike docents are trained in the appropriate treatment and protection of historic sites, and the adequate supervision of public access to areas containing visible surface archaeological sites. Because Mo'omomi was an important burial site, human bones are sometimes uncovered by the wind. We notify the State Historical Division and work with

them on re-interring the bones.

Management Programs

Although the following management programs are described separately, they form an integrated management approach. For each program listed in the following section, we have indicated a major goal and described the management methods chosen. Also included are highlights of past and current achievements and key management issues. Finally, objectives for FY2007–FY2012 are listed.

Program 1: Non-Native Species Control

a. Ungulate Control

Program Goal: To keep domestic livestock from entering the preserve, and to determine and implement a management strategy for feral ungulates that may damage the native natural resources in the preserve.

This program represents an estimated 9% of the overall effort and budget in this long range management plan.

Mo‘omomi contains a rare natural community, rare plant taxa, and other resources that are susceptible to damage caused by ungulates (hoofed animals), especially livestock. MPL is not running cattle in the adjacent pastures and the fence has deteriorated to the point that they will need to replace large sections before returning cattle to these pastures. In March 2006 we informed them that we will no longer conduct fence checks or assist with maintenance of the fence.

Deer in the preserve browse primarily on the non-native grass and trees however, their movements trample the plants and cause disturbance which may exacerbate grass growth. We will design an exclosure monitoring system, comparing deer impact against deer free areas both managed and unmanaged.

Ungulate Control Timeline

Years 1 - 6 (FY2007 – FY2012)

- Year 1 design monitoring system.
- Year 2 construct exclosures and collect initial data set.
- Year 3 – 5 ongoing monitoring and management.
- Year 6 summarize findings and determine future deer management.

Status of Public Hunting

Due to safety concerns, MPL’s adjacent cattle operations, the Conservancy’s limited resources for administration and enforcement, the Conservancy does not have a public hunting program at Mo‘omomi Preserve. (We are aware that hunters may occasionally enter the preserve without permission; we discourage this for the first three reasons stated above). In the event we determine that major control work needs to be conducted on the deer population, the Conservancy will pursue management in the best interest of resources and community at large.

b. Predator Control

Program Goal: Conduct small mammal trapping year round 1 week per month in off season Jan- March and 4 weeks per month April – December.

This program represents an estimated 21% of the overall effort and budget in this long range management plan.

On September 26, 1999, a wedge-tailed shearwater nest was sighted on the east end of Mo‘omomi Preserve. Subsequent surveys revealed two and possibly a third nest with fresh bird tracks in the sand near Kaiehu Point. This was the first observed ground nesting of these birds in the preserve since the Conservancy began management in 1988. Since the nest was discovered we have been implementing protection strategies for the nest sites and the population has increased.

Wedge-tailed shearwaters nest from March through December. On Moloka‘i, predators of the bird eggs primarily include cats and mongoose. Cats and mongoose are known to eat young chicks, thereby limiting fledging success. Parents leave the nest two to three weeks before their young fledge. At this time, young birds that are not yet capable of flight are highly vulnerable to predation. In FY2000 we developed a protection plan to determine primary threats to the bird nesting success and began its implementation. This plan focused on three primary areas: 1. Predator control (discussed here) 2. Kiawe removal to restore habitat (discussed below in weed control section) 3. Public education to minimize disturbance (signage is put up in nesting areas and pass-key users are informed of the nesting and locations and asked to avoid these areas).

We continue to conduct bird monitoring at the beginning and end of the nesting season to estimate predator control needs and to observe bird activity.

The following table documents the increased use of the preserve as a wedge-tailed shearwater nesting site. It also shows a dramatic increase in the number of predators removed from the preserve since we started the program in 1999. We are using this information to guide our predator control program. Current control efforts are conducted year round in an attempt to reduce the predators in the nesting area. We have also begun trapping outside our preserve with the permission of the neighboring landowners.

1999- 2005 Wedge-tailed shearwater Monitoring Results							
	1999	2000	2001	2002	2003	2004	2005
Number nests counted	3	17	11	22	98	96*	256
Acres of Kiawe removed	.054	.646	.223	.278	*	*	.4
Number cats trapped	1	2	4	31	16	12	27
Number mongoose trapped	2	3	4	13	15	28	150
Number Rats trapped	0	0	0	4	10	4	2
Max number traps	10	8	9	11	10	14	20
Trap nights	NA	NA	147	NA	NA	NA	1861

* incomplete survey

Predator Control Timeline

Years 1 - 6 (FY2007 – FY2012)

- Recruit volunteers to assist with predator control program.
- Conduct predator control 1 week per month in off season (January – March) and 4 weeks per month during the nesting season (April – December).
- Monitor sea bird activity once a year in October to determine the success of control activities and assess the need for predator control in the following year.

c. Weed Control

Program Goal: Reclaim at least 3 acres of native strand from weed infested areas over a six year period.

This program represents an estimated 28% of the overall effort and budget in this long range management plan

Management work at Mo‘omomi is currently focused on two priority weeds: *Prosopis pallida* (kiawe) and *Reichardia tingitana* (and other weeds in the sunflower family). Kiawe has invaded large portions of the sand dune areas. Kiawe removal plot monitoring conducted from 1995-2000 showed encouraging natural regeneration of native grasses and herbaceous plants, including a total of 7 native species. However, 2 other alien weeds – Australian saltbush (*Atriplex semibaccata*) and *Chenopodium murale* – also invaded the removal areas.

The kiawe control strategy involves removal of kiawe stands adjacent to native communities and those encroaching upon relatively intact native communities. Staff cuts kiawe tree stands, treats the cut stumps with herbicide, and then chips the cut wood to reduce the litter biomass. The wood chips are then spread over the removal area. Regular weed control monitoring is done to prevent an alien seed bank from establishing.

Reichardia tingitana is an annual that threatens to degrade the primarily native coastal

vegetation. Manual removal by staff-led volunteers is the current removal strategy.

On all Conservancy preserves in Hawai‘i, herbicide use is strictly limited, and in full compliance with standards of the state Department of Agriculture’s pesticide branch and University of Hawai‘i Cooperative Extension Service. Furthermore, Conservancy staff who oversee weed control are certified as restricted-use pesticide applicators by the state Department of Agriculture’s pesticide branch.

Weed Control Timeline

Years 1 - 6 (FY2007 – FY2012)

- Annually remove .5 acres of kiawe stands adjacent to native communities and control secondary weed growth.
- Control habitat-modifying weeds in intact native areas (including successfully reclaimed kiawe removal areas).
- Conduct control of alien grasses that threaten intact native areas and rare plant communities with an initial focus on ‘aki‘aki coastal grassland and mixed native community at the All-star dunes.

Program 2: Monitoring and Research

Program Goal: Conduct monitoring to track changes on at least one rare plant population annually and complete vegetation community plot monitoring at least once in this six year period to guide management programs.

This program represents an estimated 8% of the overall effort and budget in this long range management plan.

Natural resource monitoring tracks important biological and physical resources over time and identifies trends in these resources. We established long-term vegetation and rare plant (*Solanum nelsonii*) monitoring plots, and collected data from these plots annually from 1992 - 1997. In FY2000 the rare species data was analyzed by the Stewardship Ecologist. It was recommended that staff conduct rare plant surveys of all rare plant populations in three year intervals using the Rare Plant Restoration Group’s “Rare Plant Field Data Form.” We will survey one rare plant species a year on a rotating basis.

We are mapping the current extent of rare plant communities that contain multiple rare species with populations over 1000 individuals. These plants include; *Chamacyce skottsbergii* var. *skottsbergii*, *Tetramolopium rockii* , var. *calcisabulorum* and *T. rockii* var. *rockii*, and *Pseudognaphalium sandwicense* var. *molokaiense*.

We monitor the condition of rare plants with populations under 1000 individuals, on a 3 year rotating basis using the “Rare Plant Field Data Form” . These include *Marsilea villosa*, *Schiedea globosa*, *Sesbania tomentosa*, *Solanum nelsonii*, *Centaurium sebaeoides* and *Ophioglossum concinnum*.

The Conservancy encourages research that will help us better understand and thereby, protect the

preserve's resources. Conservancy funding for research is limited however, when possible, we provide logistical assistance to approved research projects. Over the years, a few researchers have been given permits to work in the preserve.

Natural Resource Monitoring and Research Timeline

Years 1 - 6 (FY2007 – FY2012)

- Complete vegetation data analysis and implement management recommendations.
- Provide logistical assistance to approved research projects.
- Conduct annual rare species plant monitoring in February.

Year 2 (FY2008 Additional)

- Review current and past monitoring efforts and data and develop an updated monitoring plan.

Program 3: Rare Species Protection

Program Goal: To detect, recruit or restore the presence of rare species in the preserve or adjacent to the preserve.

This program represents an estimated 6% of the overall effort and budget in this long range management plan.

Rare animal protection work focuses on sea turtles, monk seals, Laysan albatrosses, and rare plants. Turtle nesting along Kawa'aloa Bay is monitored by volunteers on a daily basis during the nesting season from May to November. The bay is located just outside of the preserve in MPL property. We keep MPL informed of volunteer activities during the nesting season. Records are kept on the location of all nesting attempts and hatches are confirmed by tracks to the beach. Volunteers coordinate turtle monitoring and provide the Conservancy with a report of nesting activity annually. All reports of monk seals are conveyed to State of Hawai'i Division of Aquatic Resources and any report of Laysan albatross sightings will be conveyed to the State Division of Forestry and Wildlife.

To protect the green sea turtles and prevent humans from disturbing their nesting grounds, the pass-key system to give fishermen access to the preserve prohibits all visitors/users of the preserve from visiting the Kaiehu Point area (above Kawa'aloa Bay where most turtles nest) at night during their nesting season to prevent artificial lights from disorienting or disturbing the turtles while in the water or nesting on shore. This rule is consistent with Hui Mālama O Mo'omomi's management plan for Moloka'i's northwestern waters. From May 1 through August 31, to protect moi spawning, no fishing passes are given out from 10 days before the full moon until 3 days after. In addition, the Conservancy conducts beach cleanups at Kawa'aloa (adjacent to the preserve) and in the preserve below Kalani Point with volunteers. Beach debris, especially nets can hinder female turtles from traversing the beach during the nesting season.

Rare plant restoration is mainly accomplished through propagation and out-planting. Rare plant protection is accomplished by eliminating the threats that impact them such as weeds and ungulates. We will assess the need to implement restoration and/or protection management by

prioritizing rare plants and rare plant populations.

We are working with partners to develop strategies that identify key rare plant species that would be appropriate to reintroduce back into the preserve and developing a plan to reintroduce the yellow wiliwili back to Mo‘omomi. A single wiliwili (*Erithrina sandwicensis*) tree that produced yellow seeds occurred just outside the preserve, but died about 5 years ago. However, TNC has a source of that yellow wiliwili to use as cutting stock for any reintroduction efforts. Other possible species that may be outplanted include the ‘ōhai (*Sesbania tomentosa*) and ‘ihi ihilauakea (*Marsilia villosa*). There have been issues beyond our control that have slowed this effort such as the introduction of the *Erithrina* gall wasp to the island and the time and funding availability of the partners involved. Our role in this project will be to provide the site and staff to assist with the labor and planning. We are looking to our partners to lead the planning and identify funding. We will move forward with this when funding and leadership is available. Any reintroduction will be done within fence enclosures for protection from grazing animals. We will also work cooperatively with neighboring land owners and managers to develop strategies for areas adjacent to the Preserve.

Rare Species Protection Timeline

Years 1 - 6 (FY2001 – FY2006)

- Maintain turtle nesting monitoring under the direction of the National Marine Fisheries Service (NMFS) and the State Division of Aquatic Resources (DAR) and with the help of volunteers.
- Conduct at least one beach cleanup at Kawa‘aloa Bay and within the preserve in April prior to turtle nesting season to protect turtles and other marine life utilizing the coastal community. Conduct additional beach clean ups if litter build up warrants the need for such.
- Collaborate with partners to develop and implement a plan to reintroduce rare native plants to Mo‘omomi Preserve.

Program 4: Community Outreach

Program Goal: To build community support and awareness concerning the conservation of native natural resources, and to implement effective conservation practices that are also culturally sensitive.

This program represents an estimated 22% of the overall effort and budget in this long range management plan.

The Conservancy’s Moloka‘i community outreach programs go far beyond the boundaries of any single conservation site; therefore there is considerable overlap in our community outreach program among the three preserves. Outreach activities at each preserve affect the community’s overall perception of the Conservancy and the importance of preserving Moloka‘i’s native natural resources. This overlap is reflected in our report for this section.

We have taken a multi-faceted, comprehensive approach towards community outreach on Moloka‘i. The Nature Conservancy has evolved from being a site specific conservation manager,

to an organization that does conservation on a landscape scale. Moloka‘i’s population is around 7,000 and the outreach activities help educate the community about the importance of preserving Moloka‘i’s natural resources and the Conservancy’s role in managing those resources.

We work with a variety of conservation partners, schools, community groups, government and private funders, employment training organizations and programs, and individual volunteers and volunteer groups.

- ◆ Hō ‘ikaika (since 2001) and AmeriCorps (since 1999) are year round federal work experience programs that provide young adults as volunteers. In exchange, the Conservancy provides conservation sites for practical, hands-on training.
- ◆ Internships (since 1984), summer workers from Alu Like (since 1987), the State Summer Youth Employment Program (since 1993) and internships from the Natural Resources Academy (NaRA) (since 2004) also provide young adults hands-on experience in natural resource conservation.
- ◆ Moloka‘i Advisory Council (since 1993), Moloka‘i Hunting Working Group (since 1993), and Kamalō Conservation Advisors (since 2001) are community groups that we engage in program decision making.
- ◆ Ke Aupuni Lōkahi (Moloka‘i Enterprise Community “EC” Board) (since 1999), The Moloka‘i Water Working Group (MWWG) (since 1993), and Watershed Advisory Group (WAG) (since 2002) are examples of the Conservancy’s involvement with Community-wide decision making entities. Ke Aupuni Lōkahi began a strategic planning process that led to the formation of the EMoWP (which the Conservancy is a partner) as part of its broader goal to develop island wide community resources to stimulate the local economy yet retain its rural atmosphere. MWWG plays an advisory role to the State Water Commission’s mandate of water allocation and projections. WAG is helping the State Department of Health assess and implement strategies to remedy non-point source pollution (water quality/sedimentation) on Moloka‘i’s south shore and reefs.
- ◆ We conduct monthly guided hikes at Kamakou and Mo‘omomi Preserves (the Kamakou hike includes a scenic overlook into Pelekunu, and provides an opportunity for us to teach hike participants about Pelekunu’s important stream ecosystem), and work with the public schools to provide conservation/environmental education through field trips and slideshows. Moanalua Gardens Foundation is a key environmental education partner on Moloka‘i.
- ◆ Produce a quarterly newsletter, called “*Nature’s Newsflash*”, that is mailed to every address on Moloka‘i to inform the local community about conservation news and activities on Moloka‘i.
- ◆ On Moloka‘i our annual “big” event is the Moloka‘i Earth Day Celebration. Earth Day Celebration is a way of bringing together conservation agencies/organizations to display their mission and accomplishments to the local community. The event is interactive and provides basic environmental education to the public. The event draws at least 10% of Moloka‘i’s population.
- ◆ Our volunteer program continues to grow and includes individuals, school groups (Moloka‘i Environmental Preservation Organization – MEPO a Moloka‘i High and Intermediate School club), trained hike docents, outer island weekend groups, and local Moloka‘i hunters and groups.

- ◆ In October 2000, the Conservancy staff initiated and coordinated a new partnership called the Moloka‘i subcommittee of the Maui Invasive Species Committee (MoMISC). The goal of the subcommittee is to prevent introduced invasive pests from becoming established or widespread on Moloka‘i. MoMISC activities include response to reports of invasive pests, containment of selected incipient pests, creating educational material, and public outreach. MoMISC collaborates on a state-wide level with other island Invasive Species Committees and the Coordinating Group on Alien Pest Species (CGAPS). A weed database was created for more efficient tracking and landscape mapping of the Conservancy’s and MoMISC’s weed control activities. In cooperation with MoMISC and the State Department of Agriculture we are working to increase the public’s awareness of invasive alien species, through local community events (Earth Day Celebration), brochures, posters, and our quarterly issued bulk mailed newsletter, *Nature’s Newsflash*. Our immediate goal is to teach members of the community to identify and report key invasive species that are not yet established on Moloka‘i [e.g. *Miconia calvescens*, fountain grass (*Pennisetum setaceum*), Asian clam (*Corbicula fluminea*), Caribbean frog (*Eleutherodactylus coqui*), gorse (*Ulex europaeus*), brown tree snake (*Boiga irregularis*), pampas grass (*Cortaderia jubata*)].

Community Outreach Timeline

Years 1 – 6 (FY2007 – FY2012)

- Maintain Hō ‘ikaika and AmeriCorps federal volunteer programs to provide support for field operations.
- Select and fund annual Moloka‘i High School summer intern (cost reflected in personnel).
- When feasible, train and oversee Alu Like and other Summer Youth Program participants in management activities throughout the summer months.
- Continue to engage community groups (MAC, MHWG, and Kamalō Conservation Advisors) in program decision-making; organize/recruit new groups as necessary.
- Continue to participate in MWWG, Ke Aupuni Lōkahi, and WAG.
- Conduct monthly and special community group hikes at Kamakou and Mo‘omomi Preserves.
- Continue production and distribution of *Nature’s Newsflash*.
- Coordinate and organize annual Moloka‘i Earth Day Event.
- Maintain and develop docent and volunteer participation and conduct training sessions as needed.
- Cultivate active participation of Moloka‘i Earth Preservation Organization (MEPO) in the protection of Moloka‘i native natural resources (e.g. weed control trips, restoration of native ecosystems). Encourage MEPO to develop goals to become a source of native plants for re-vegetation.
- Support MoMISC (Moloka‘i Subcommittee of Maui Invasive Species Committee) activities.

Program 5: Fire, Emergency, and Safety

Program Goal: Provide staff with training and equipment that will allow them to assist primary fire and rescue agencies during a fire or emergency on or adjacent to the preserve.

This program represents an estimated 6% of the overall effort and budget in this long range management plan.

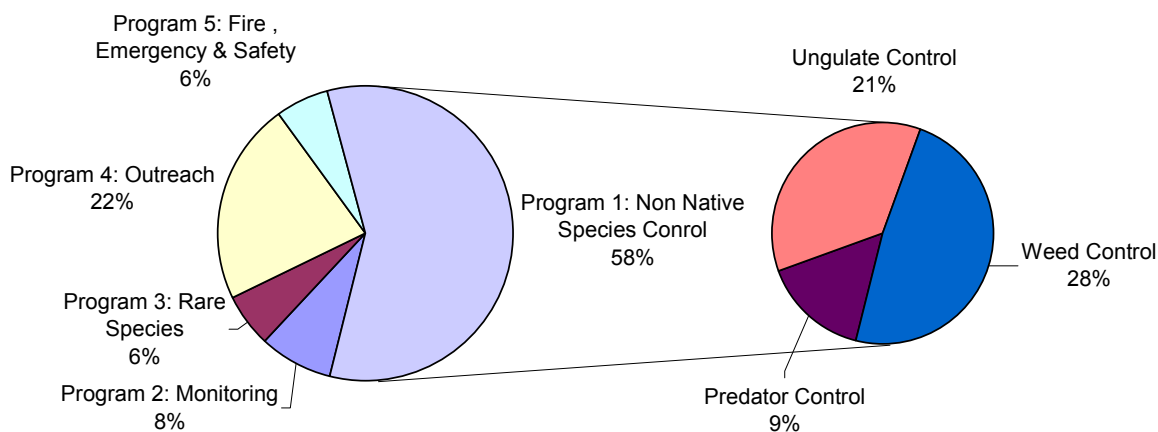
To provide the safest possible environment for staff, interns and volunteers, all staff are provided training in basic first aid and CPR. As training becomes available and needs warrant training is also provide for advanced wilderness first aid, fire suppression and pre-suppression, helicopter safety, and hunters education. Field staff are provided with complete first aid kits. Fully stocked first aid kits are kept in each vehicle and in preserve cabins and camps. Field staff who have completed basic fire training are provided with full personal protective gear so that they will be equipped to assist in the event of a fire.

Dirt roads provide the main access to Mo'omomi Preserve and also provide fire breaks. Roads and trails are maintained to provide safe access to and within the preserve.

Activities

- Update Wildfire Management Plan.
- Provide emergency training opportunities for staff including but not limited to keeping First Aid and CPR certifications current.
- Update staff fire suppression training.
- Purchase equipment as needed to allow immediate response to fire threats.
- Respond to emergencies or fire threats.
- Maintain preserve roads as needed.

NAPP Mo'omomi FY07-FY12 Effort/Budget by Program



BUDGET SUMMARY

The following tables summarize the six-year budget for Mo'omomi Preserve. Through the NAP program, the state pays two-thirds of the management costs outlined in this long-range plan.

Personnel:

The Conservancy's Moloka'i operations maintain a full time base staff of 6. Other part-time, short-term, or year-to-year personnel may be hired periodically as the budget allows and project needs warrant.

The Personnel line item includes:

A combined effort of Moloka'i's base staff equal to 90% of one FTE.

The Nature Conservancy's currently negotiated (annually with our federal cognizant agency) fringe benefit rate will accrue on all salary/wage costs. The FY07 negotiated rate is 40% for all regular staff and 12% for all temporary staff. These rates are subject to slight change each year.

Technical and annual planning support is also provided by the Honolulu office of the Conservancy. In particular, the Conservation Programs Director, Conservation Programs Coordinator, Conservation Planner, Senior Scientist, and other island resource staff help prepare annual plans and reports, develop and implement monitoring and research programs, and establish interpretive and intern programs at the preserve. As budget and needs allow, these support staff members may charge a small portion of their time to this project.

Supplies and Equipment:

FY07:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

15% of one vehicle: \$7,000

TNC Moloka'i has found that it is more cost effective to purchase vehicles rather than lease them. Our plan is to purchase a vehicle as part of TNC's match commitment on this project every two years in order to phase out of current vehicle leases.

FY08:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

FY09:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

15% of one vehicle: \$6,000

FY10:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

FY11:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

15% of one vehicle: \$7,000

FY12:

Various office and project related supplies and expenses: \$3,800

15% of 3 computers: \$1,050

Travel:

A travel budget of \$3,050 has been budgeted each year to cover 15% of staff inter island travel for workshops, training, staff meetings and one mainland trip for 4 staff to attend a workshop.

Subcontracts:

\$10,000 for a Cultural Assessment subcontract has been budgeted in the final year of this contract (FY12) in anticipation of the next 6 year NAPP renewal of this project.

Other:

FY07:

Vehicle lease/fuel/maint - \$5,842

Communications, training fees, insurance, barracks rent - \$3,980

FY08:

Vehicle lease/fuel/maint - \$4,978

Communications, training fees, insurance, barracks rent - \$3,980

FY09:

Vehicle lease/fuel/maint - \$4,978

Communications, training fees, insurance, barracks rent - \$3,980

FY10:

Vehicle lease/fuel/maint - \$4,978

Communications, training fees, insurance, barracks rent - \$3,980

FY11:

Vehicle lease/fuel/maint - \$4,174

Communications, training fees, insurance, barracks rent - \$3,980

FY12:

Vehicle lease/fuel/maint - \$3,600

Communications, training fees, insurance, barracks rent - \$3,980

Overhead:

The allowable overhead rate of 10% on NAPP projects has been included on all costs.

BUDGET TABLE

Mo'omomi NAPP							
	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	TOTAL
Labor and Fringe	45,000	46,800	48,672	50,619	52,644	54,749	298,484
Supplies/Equipment	11,850	4,850	10,850	4,850	11,850	4,850	49,100
Travel	3,050	3,050	3,050	3,050	3,050	3,050	18,300
Subcontracts	-	-	-	-	-	10,000	10,000
Other	9,822	8,958	8,958	8,958	8,154	7,580	52,430
<i>Subtotal</i>	<i>69,722</i>	<i>63,658</i>	<i>71,530</i>	<i>67,477</i>	<i>75,698</i>	<i>80,229</i>	<i>428,314</i>
Overhead	6,972	6,366	7,153	6,748	7,570	8,023	42,831
TOTAL	76,694	70,024	78,683	74,225	83,267	88,252	471,145
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
Mo'omomi Budget	76,694	70,024	78,683	74,225	83,267	88,252	471,145
Private Match (1/3 of total)	25,565	23,341	26,228	24,742	27,756	29,417	157,048
TOTAL NAPP REQUEST (2/3)	51,129	46,683	52,455	49,483	55,512	58,835	314,097

APPENDIX 1
NATIVE NATURAL COMMUNITIES OF MO‘OMOMI PRESERVE

NATIVE NATURAL COMMUNITY NAME	GLOBAL RANK (a)
‘Aki‘aki (<i>Sporobolus virginicus</i>) Coastal Dry Grassland	G4
Hinahina (<i>Heliotropium</i> spp.) Coastal Dry Shrubland	G3
‘Ilima (<i>Sida fallax</i>) Coastal Dry Shrubland	G3
Naupaka Kahakai (<i>Scaevola sericea</i>) Coastal Dry Shrubland	G4
Nehe (<i>Lipochaeta integrifolia</i>) Coastal Dry Shrubland	G3
<i>Tetramolopium rockii</i> Coastal Dry Shrubland ¹	G1

¹Rare natural community

(a) Key to Global Ranks as defined by Hawai‘i Natural Heritage Program:

G1 = Critically imperiled globally (typically 1- 6 current occurrences).

G3 = Restricted range (typically 21-100 current occurrences).

G4 = Apparently secure globally (> 100 occurrences).

APPENDIX 2

RARE NATIVE PLANTS OF MO‘OMOMI PRESERVE

SCIENTIFIC NAME	HAWAIIAN NAME	GLOBAL RANK (a)	FEDERAL STATUS (b)
<i>Centaurium sebaeoides</i>	‘āwiwi	G1	LE
<i>Chamaesyce skottsbergii</i> var. <i>skottsbergii</i>	‘akoko, koko, kōkōmālei	G2T2	LE
<i>Gnaphalium sandwicense</i> var. <i>Moloka‘iense</i>	‘ena‘ena	G3T1	
<i>Marsilea villosa</i> ¹	‘ihi‘ihi, ‘ihi la‘au	G1	LE
<i>Sesbania tomentosa</i> ²	‘ohai	G2	LE
<i>Solanum nelsonii</i>		G2	
<i>Tetramolopium rockii</i> var. <i>calcisabulorum</i>		G1T1	LT
<i>Tetramolopium rockii</i> var. <i>rockii</i>		G1T1	LT

¹ Reported in preserve in 1970s; may still occur in preserve.

² Known from just outside the preserve.

(a) Key to Global Ranks as defined by Hawai‘i Natural Heritage Program:

G1 = Species critically imperiled globally (typically 1-5 current occurrences).

G2 = Imperiled globally (typically 6-20 current occurrences).

G3 = Restricted range (typically 21-100 current locations).

T1 = Subspecies or variety critically imperiled globally.

T2 = Subspecies or variety imperiled globally (typically 6-20 current occurrences).

(b) Key to Federal Status:

LE = Taxa formally listed as endangered.

LT = Taxa formally listed as threatened.

APPENDIX 3
RARE NATIVE ANIMALS OF MO‘OMOMI PRESERVE

TAXON	COMMON NAME	GLOBAL RANK(a)	FEDERAL STATUS (b)
<i>Chelonia mydas</i>	Honu, Green turtle	G3	LT
<i>Eretmochelys imbricata</i> *	Hawksbill sea turtle	G3	LE
<i>Phoebastria immutabilis</i>	Laysan albatross	G3	
<i>Monachus schauinslandi</i>	Hawaiian monk seal	G2	LE

*Based on historical accounts by residents, occurrence not confirmed.

(a)Key to Global Ranks as defined by the Hawai‘i Natural Heritage Program:

G3 = Restricted range (typically 21 to 100 occurrences).

(b)Key to Federal Status:

LE = Taxa formally listed as endangered.

LT = Taxa formally listed as threatened.